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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/630.082	07/30/2003	Zhinong Ying	9342-101	8472
20792	7590	11/02/2004	EXAMINER	
MYERS BIGEL SIBLEY & SAJOVEC			PHAN, THO GIA	
PO BOX 37428			ART UNIT	
RALEIGH, NC 27627			PAPER NUMBER	
			2821	

DATE MAILED: 11/02/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/630,082

Applicant(s)

YING ET AL.

Examiner

Tho G. Phan

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 30 July 2003.  
2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.  
3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-27 is/are pending in the application.  
4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.  
5) ☒ Claim(s) 22-26 is/are allowed.  
6) ☒ Claim(s) 1-8, 11 and 27 is/are rejected.  
7) ☒ Claim(s) 9, 10 and 12-21 is/are objected to.  
8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.  
10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).  
11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☐ All b) ☐ Some \* c) ☐ None of:  
1. ☐ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)  
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)  
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date 2/26/04.  
4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.  
5) ☐ Notice of Informal Patent Application (PTO-152)  
6) ☐ Other: \_\_\_\_\_.

## DETAILED ACTION

### *Claim Rejections - 35 USC § 102*

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1-2, 4-5, 11 and 27 are rejected under 35 U.S.C. 102(b) as being anticipated by Kim (5,555,449).

Kim in figures 1-5 discloses an acoustic channel 16,24/26 formed of substrate material (see cross-section of figure 3), the acoustic channel having a wall with an enclosed space and an associated length and width, the acoustic channel adapted, during operation, to guide the output of a speaker (a user speaks sound waves to a speaking region 20, which sound waves transmits to a desired location in the housing 2) to a target location; and an antenna 17 that is integrated with the acoustic channel (col.4, lines 22-28), wherein the acoustic channel is formed of a substrate material that is non-conductive (see cross-section of figures 3 and 5), and wherein the antenna comprises a conductive element 17 is formed on and/or in a portion of the wall of the acoustic channel (figure 3), further comprising a speaker 4 in communication with the acoustic channel, wherein at least a portion of the conductive element is conformal to the shape of a portion of the acoustic channel wall (figs.2-3), the housing 2 configured to enclose a transceiver that transmits and receives signals (col.3, lines 40-48).

***Claim Rejections - 35 USC § 103***

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claim 3 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kim in view of Birnbaum et al (6,496,149).

Kim has been discussed above but fails to teach a dielectric resonant antenna. However, Birnbaum et al in figures 1a-c shows a dielectric resonant antenna 105. It would have been obvious design choice to provide a dielectric resonant antenna as taught by Birnbaum et al for the purpose of improving the antenna gain.

5. Claims 6-8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kim in view of Kivela (6,005,525) and Wakui et al (6,693,596).

Kim has been discussed above but fails to teach a planar inverted antenna. However, Kivela in figures 4-7 shows a planar inverted antenna 40. It would have been obvious design choice to provide a planar inverted antenna as taught by Kivela for the purpose of providing the radiation to the side of the ground plane is small (col.5, lines 17-35).

Regarding to the specific bands of operation as claimed. The "secondary reference" of Wakui et al in figures 8-18 is good to cite as evidence of obvious of a GPS antenna 4 having a length of  $\frac{1}{4}$  wavelength (col.7-8, lines 41+). Antennas and their elements are routinely

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"frequency scaled" and thus claims limitations are obvious design choices of wide bandwidth and matching variation with frequency as of interest.

***Allowable Subject Matter***

6. Claims 22-26 are allowed.
7. Claims 9-10, and 12-21 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

***Conclusion***

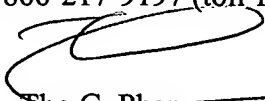
8. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. The patents to Ylitalo et al and Bartha et al are cited as of interest and illustrated a similar structure to radio assembly with acoustic member.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tho G. Phan whose telephone number is 571-272-1826. The examiner can normally be reached on (M-R), Monday-Thursday (7:30-6:00).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Don Wong can be reached on 571-272-1834. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Tho G. Phan  
Primary Examiner  
Art Unit 2821